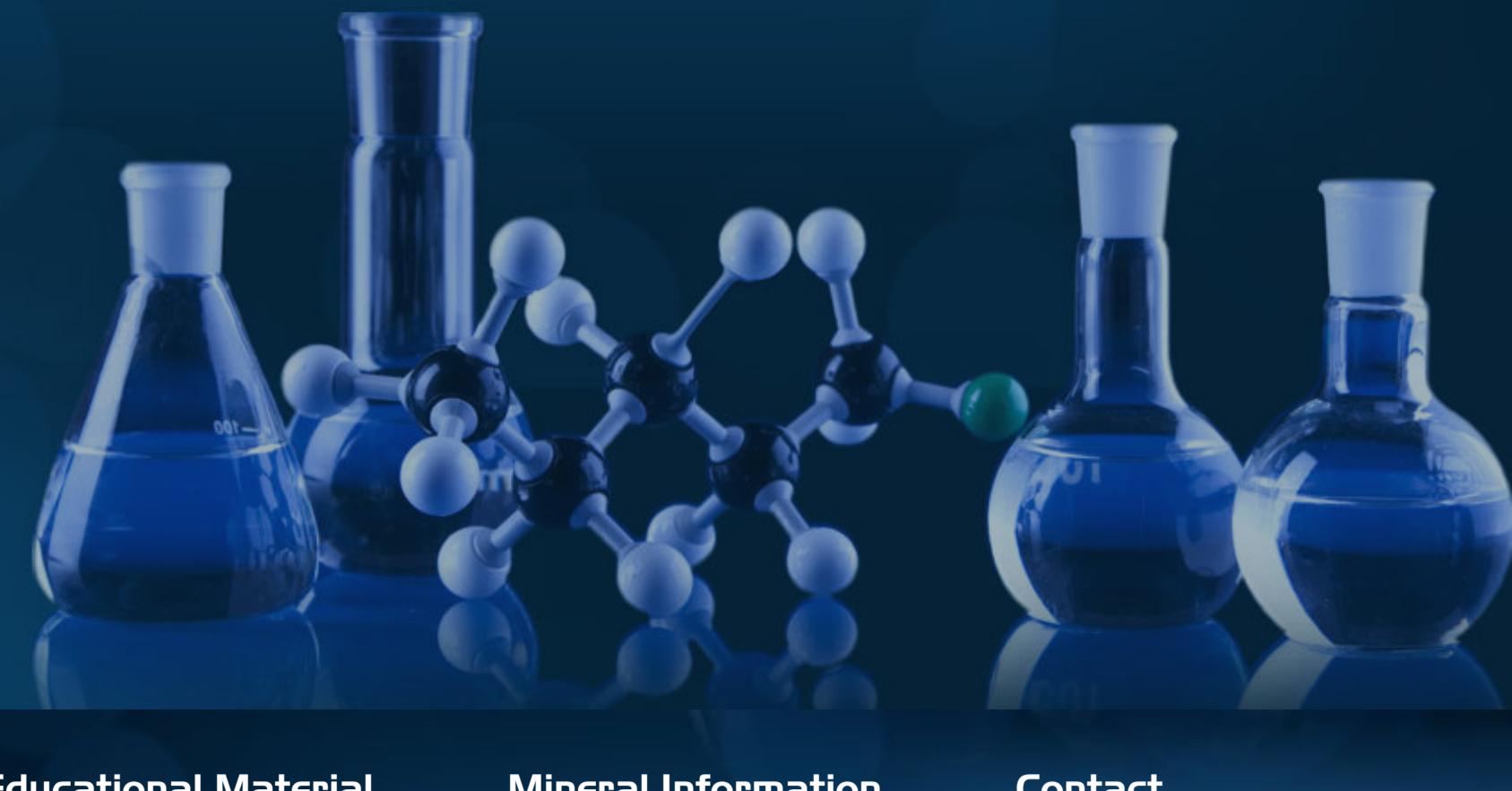




ARL is an Authority on Nutrition and the Science of Balancing Body Chemistry Through Hair Tissue Mineral Analysis!

Hair Tissue Mineral Analysis



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High Readings – Loss or Toxicity

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High Readings - Loss or Toxicity

A common question from practitioners and patients is the significance of very high readings on a hair mineral analysis. These readings can have different meanings depending upon which mineral is elevated, the history of the patient, whether one has been following a scientific program and the relationship to other readings on the test.

A very high reading may represent a mineral loss, bio-unavailability, toxicity, elimination through the hair, compensation or deposition in the hair. This subject can be confusing and a bit technical. Let us see if it can be clarified.

Mineral Loss

Often minerals are excreted or lost through the hair, causing a high reading. This loss, especially if on the first test, is usually pathological. If it occurs on a retest when a person has been following a nutritional balancing program, it is usually a normal part of the healing process. For example, toxic metal levels often rise on a repeat hair test. The body eliminates the mineral in part through the hair tissue.

When a vital mineral becomes biounavailable for any reason, it may also be lost through the hair. Minerals become biounavailable due to a deficiency of a retaining factor, or because the valence or form of the mineral has changed so that it is not retained in the body.

For example, calcium must be in an ionized state to remain in the blood. If the sodium and potassium levels fall, calcium will not remain in an ionized state, and will begin to precipitate into the tissues.

Adequate magnesium is also critical to keep calcium in solution.

Toxicity

A high level of a mineral may represent a toxic level of the mineral. Common toxicities include copper, heavy metals such as lead, mercury and cadmium, or aluminum and nickel. Less common but certainly not rare are iron, manganese and chromium toxicity. This may be due to water supplies, soil and food contamination or occupational exposure.

Selenium toxicity may occur from the use of shampoos containing selenium or contaminated water or food. Zinc toxicity is uncommon but can occur from occupational exposure such as mining or smelting.

Calcium, magnesium, sodium, potassium and phosphorus - the macro minerals - when elevated are not usually considered toxic. High levels of calcium and magnesium usually represent a loss into the tissues. This is also called biounavailability.

High sodium and potassium levels in the fast oxidizer usually represent a retention in the hair tissue due to the action of aldosterone, toxic metals, or kidney congestion. High potassium in relation to sodium usually means a potassium loss through the hair due to cellular destruction.

Elevated phosphorus usually indicates excessive protein breakdown, which releases phosphorus.

Compensation

This is an interesting area. For example, at times zinc will be elevated, perhaps along with copper elevation. In these cases, zinc may rise to compensate for the copper toxicity. The elevated zinc reduces or prevents the symptoms of copper toxicity since zinc is a copper antagonist. Similarly, a high chromium could compensate for or help balance a high iron. A high phosphorus might help balance a high calcium.

This is a very subtle area, because the mineral to be balanced, the one that is at a toxic level, may not show up on the first hair test. It may be hidden, but the body is still compensating or balancing it. This is most often seen with zinc, which frequently rises to balance a hidden high copper in a slow oxidizer.

Elimination On A Program

If a person follows a nutritional balancing program, it is not unusual that on the second or a later test, a mineral that was previously normal or low will suddenly become elevated. The most common examples are the toxic metals. These are frequently low on the first several tests. This occurs because the body has insufficient energy to eliminate the toxic metals. It does not mean there are no toxic metals.

As the body gains energy and nutrient levels increase, energy becomes available to eliminate toxic metals from tissue storage sites. When this occurs, frequently a retest will show a higher level of one or more toxic metals. This often includes copper and iron, and may include manganese and even chromium and selenium.

Occasionally calcium and magnesium will rise precipitously on a retest. This can be caused by an increase in copper, an elimination of toxic metals that slows the oxidation rate, or a rise in sodium and potassium levels which dissolves calcium deposits. A sudden elevation of calcium and magnesium on a retest can also be caused by increased adrenal stress or a shock that causes slower oxidation and a calcium shell, psychological withdrawal pattern.

How Long Does It Take To Normalize A High Mineral Level?

While in some cases a high mineral level will reduce within three to six months, commonly a year or more is required to reduce high mineral levels. This is especially true with cadmium, manganese and iron toxicity. Copper and aluminum toxicity vary with each case. Toxic metals may correct quickly, but may rise again as more is eliminated from other tissue storage sites.

The time required to reduce a high mineral level is hard to predict. It not only depends upon which mineral is involved, but also depends significantly upon the patient's diet, lifestyle and stress level. For this reason, it is best not to offer exact times required to balance a hair mineral chart.

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